

## SEQUENCE LISTING

<110> Japan Science and Technology Corporation

<120> Method for Producing an Antibody with Genetic Immunization

<130> 01F033PCT

<140> PCT/JP01/06371

<141> 2001-07-24

<150> JP2000-222743

<151> 2000-07-24

<150> JP2000-254407

<151> 2000-08-24

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<170> PatentIn Ver. 2.1

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aatcaaaacg ctgattaaaa gaagcacggt atg atg acc aaa cat aaa aag tgt 174  
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gtt aaa cta act cga gat tct cag agt tta tgc ccc tat gat tgg att 270  
Val Lys Leu Thr Arg Asp Ser Gln Ser Leu Cys Pro Tyr Asp Trp Ile

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Gly Phe Gln Asn Lys Cys Tyr Tyr Phe Ser Lys Glu Glu Gly Asp Trp				
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aat tca agt aaa tac aac tgt tcc act caa cat gcc gac cta act ata	366			
Asn Ser Ser Lys Tyr Asn Cys Ser Thr Gln His Ala Asp Leu Thr Ile				
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Ile Asp Asn Ile Glu Glu Met Asn Phe Leu Arg Arg Tyr Lys Cys Ser				
75	80	85		
tct gat cac tgg att gga ctg aag atg gca aaa aat cga aca gga caa	462			
Ser Asp His Trp Ile Gly Leu Lys Met Ala Lys Asn Arg Thr Gly Gln				
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Trp Val Asp Gly Ala Thr Phe Thr Lys Ser Phe Gly Met Arg Gly Ser				
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gaa gga tgt gcc tac ctc agc gat gat ggt gca gca aca gct aga tgt	558			
Glu Gly Cys Ala Tyr Leu Ser Asp Asp Gly Ala Ala Thr Ala Arg Cys				
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Tyr Thr Glu Arg Lys Trp Ile Cys Arg Lys Arg Ile His				
140	145	150		
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&lt;211&gt; 149

&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 2

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Thr Gln His Ala Asp Leu Thr Ile Ile Asp Asn Ile Glu Glu Met Asn
      65              70              75              80
Phe Leu Arg Arg Tyr Lys Cys Ser Ser Asp His Trp Ile Gly Leu Lys
      85              90              95
Met Ala Lys Asn Arg Thr Gly Gln Trp Val Asp Gly Ala Thr Phe Thr
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Lys Ser Phe Gly Met Arg Gly Ser Glu Gly Cys Ala Tyr Leu Ser Asp
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Arg Lys Arg Ile His
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Ala Val Glu Ala Thr Gly Glu Lys Val Leu Arg Tyr Glu Thr Phe Ile
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agt gac gtg ctg cag cgg gac ttg cga aag gtg ctg gac cat cga gac   149
Ser Asp Val Leu Gln Arg Asp Leu Arg Lys Val Leu Asp His Arg Asp
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aag gta tat gag cag ctg gcc aaa tac ctt caa ctg aga aat gtc att   197
Lys Val Tyr Glu Gln Leu Ala Lys Tyr Leu Gln Leu Arg Asn Val Ile
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 Leu Gly Cys Asn Phe Phe Val Asp Thr Val Val Pro Asp Thr Ser Arg  
 75 80 85

atc tat gtg gcc ctg gga tat ggt ttt ttc ctg gag ttg aca ctg gca 341  
 Ile Tyr Val Ala Leu Gly Tyr Gly Phe Phe Leu Glu Leu Thr Leu Ala  
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gaa gct ctc aag ttc att gat cgt aag agc tct ctc ctc aca gag ctc 389  
 Glu Ala Leu Lys Phe Ile Asp Arg Lys Ser Ser Leu Leu Thr Glu Leu  
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 Ser Asn Ser Leu Thr Lys Asp Ser Met Asn Ile Lys Ala His Ile His  
 125 130 135

atg ttg cta gag ggg ctt aga gaa cta caa ggc ctg cag aat ttc cca 485  
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gcctgaatgc ctttg 548

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&lt;212&gt; PRT

&lt;213&gt; Homo sapiens

&lt;400&gt; 4

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Tyr Leu Gln Leu Arg Asn Val Ile Glu Arg Leu Gln Glu Ala Lys His  
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 Glu Leu Ser Glu Lys Ser Lys Leu Gln Glu Ile Tyr Gln Glu Leu Thr  
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cag ctg aag gct gca gtg ggt gag ttg cca gag aaa tcc aag ctg cag 339  
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gag atc tac cag gag ctg acc cgg ctg aag gct gca gtg ggt gag ttg 387  
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atg aag tat ctc cgg cac cgg cgg ccc aat gcc acc ctc att ctg gcc 165  
 Met Lys Tyr Leu Arg His Arg Arg Pro Asn Ala Thr Leu Ile Leu Ala  
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atc ggc gct ttc acc ctc ctc ctc ttc agt ctg cta gtg tca cca ccc 213  
 Ile Gly Ala Phe Thr Leu Leu Leu Phe Ser Leu Leu Val Ser Pro Pro  
 20 25 30

acc tgc aag gtc cag gag cag cca ccg gcg atc ccc gag gcc ctg gcc 261  
 Thr Cys Lys Val Gln Glu Gln Pro Pro Ala Ile Pro Glu Ala Leu Ala  
 35 40 45

tgg ccc act cca ccc acc cgc cca gcc ccg gcc ccg tgc cat gcc aac 309  
 Trp Pro Thr Pro Pro Thr Arg Pro Ala Pro Ala Pro Cys His Ala Asn  
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acc tct atg gtc acc cac ccg gac ttc gcc acg cag ccg cag cac gtt 357  
 Thr Ser Met Val Thr His Pro Asp Phe Ala Thr Gln Pro Gln His Val  
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cag aac ttc ctc ctg tac aga cac tgc cgc cac ttt ccc ctg ctg cag 405  
 Gln Asn Phe Leu Leu Tyr Arg His Cys Arg His Phe Pro Leu Leu Gln  
 85 90 95

gac gtg ccc ccc tct aag tgc gcg cag ccg gtc ttc ctg ctg ctg gtg 453  
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 Ile Lys Ser Ser Pro Ser Asn Tyr Val Arg Arg Glu Leu Leu Arg Arg  
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 Thr Trp Gly Arg Glu Arg Lys Val Arg Gly Leu Gln Leu Arg Leu Leu  
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ttc ctg gtg ggc aca gcc tcc aac ccg cac gag gcc cgc aag gtc aac 597

Phe Leu Val Gly Thr Ala Ser Asn Pro His Glu Ala Arg Lys Val Asn  
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 Val Val Thr Gln Asn Glu Arg Tyr Pro Pro Tyr Cys Gly Gly Gly Gly  
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 275 280 285

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 305 310 315 320

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 Gly Val Arg Ala Pro Ser Gln His Leu Ser Ser Phe Asp Pro Cys Phe

aaattttgtg 2186

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 Glu Ser Ile Val Glu Glu Tyr Glu Asp Glu Leu Ile Glu Phe Phe Ser  
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 cga gag gct gac aat gtt aaa gac aaa ctt tgc agt aag cga aca gat 651  
 Arg Glu Ala Asp Asn Val Lys Asp Lys Leu Cys Ser Lys Arg Thr Asp  
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 Ala Val Gly Val Gly Val Ala Glu Leu Thr Glu Ala Gln Arg Arg Gly  
 15 20 25

ctg cag gtg gcc ctg gag gaa ttt cac aag cac ccg ccc gtg cag tgg 207  
 Leu Gln Val Ala Leu Glu Phe His Lys His Pro Pro Val Gln Trp  
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 Ala Phe Gln Glu Thr Ser Val Glu Ser Ala Val Asp Thr Pro Phe Pro  
 50 55 60  
  
 gct gga ata ttt gtg agg ctg gaa ttt aag ctg cag cag aca agc tgc 303  
 Ala Gly Ile Phe Val Arg Leu Glu Phe Lys Leu Gln Gln Thr Ser Cys  
 65 70 75  
  
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 Arg Lys Arg Asp Trp Lys Lys Pro Glu Cys Lys Val Arg Pro Asn Gly  
 80 85 90  
  
 agg aaa cgg aaa tgc ctg gcc tgc atc aaa ctg ggc tct gag gac aaa 399  
 Arg Lys Arg Lys Cys Leu Ala Cys Ile Lys Leu Gly Ser Glu Asp Lys  
 95 100 105  
  
 gtt ctg ggc cgg ttg gtc cac tgc ccc ata gag acc caa gtt ctg cgg 447  
 Val Leu Gly Arg Leu Val His Cys Pro Ile Glu Thr Gln Val Leu Arg  
 110 115 120 125  
  
 gag gct gag gag cac cag gag acc cag tgc ctc agg gtg cag cgg gct 495  
 Glu Ala Glu Glu His Gln Glu Thr Gln Cys Leu Arg Val Gln Arg Ala  
 130 135 140  
  
 ggt gag gac ccc cac agc ttc tac ttc cct gga cag ttc gcc ttc tcc 543  
 Gly Glu Asp Pro His Ser Phe Tyr Phe Pro Gly Gln Phe Ala Phe Ser  
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 Lys Ala Leu Pro Arg Ser  
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Met Arg Leu Thr  
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cgg aag cgg ctc tgc tgc ttt ctt atc gcc ctg tac tgc cta ttc tcc 164  
Arg Lys Arg Leu Cys Ser Phe Leu Ile Ala Leu Tyr Cys Leu Phe Ser  
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ctc tac gct gcc tac cac gtc ttc ttc ggg cgc cgc cgc cag gcg ccg 212  
Leu Tyr Ala Ala Tyr His Val Phe Phe Gly Arg Arg Arg Gln Ala Pro  
25 30 35

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Arg Arg Gly Arg Glu Gln Ser Thr Leu Glu Ser Glu Glu Trp Asn Pro  
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tgg gaa gga gat gaa aaa aat gag caa caa cac aga ttt aaa act agc 356  
Trp Glu Gly Asp Glu Lys Asn Glu Gln Gln His Arg Phe Lys Thr Ser  
70 75 80

ctt caa ata tta gat aaa tcc acg aaa gga aaa aca gat ctc agt gta 404  
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85 90 95 100

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16/17

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Ile Leu Asn Gly Arg Glu Lys Ala Lys Ile Phe Tyr Ala Thr Gln Trp	
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Leu Leu Tyr Ala Gln Asn Leu Val Gln Ile Gln Lys Leu Gln His Leu	
185 190 195	
gct gtt gtt ttg ctc gga aat gaa cat tgt gat aat gag tgg ata aac	740
Ala Val Val Leu Leu Gly Asn Glu His Cys Asp Asn Glu Trp Ile Asn	
200 205 210	
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215 220 225	
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Tyr Asp Ser Pro Trp Ile Asn Asp Val Asp Val Phe Gln Trp Pro Leu	
230 235 240	
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245 250 255 260	
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Met Leu His Asp Glu Arg Pro Tyr Leu Cys Asn Phe Leu Gly Thr Ile	
265 270 275	
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[illegible]